Textbook Alignment to the Utah Core – Algebra 2

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes _____ No _____

Name of Company and Individual Conducting Alignment: _____

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

☐ **On record with the USOE.**

☐ **The "Credential Sheet" is attached to this alignment.**

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Algebra 2 Core Curriculum

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Title: Algebra 2 ©2007 **ISBN#: SE:** 978-0-618-59541-9 **TE:** 978-0-618-59559-4

Publisher: McDougal Littell

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: 100 %

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: N/A%

STANDARD I: Students will use the language and operations of algebra to evaluate, analyze and solve problems.				
Percentage of coverage in the *student and teacher edition* for Standard I: 100 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: N/A%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition (SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 1.1: Evaluate, analyze and solve mathematical situations using algebraic properties and symbols.				
a.	Solve and graph first-degree absolute value equations of a single variable.	**SE/TE:** 50, 51-53, 55-56, 58, 60, 64, 65, 69, 88, 121-122, 123-126, 127-129, 136, 138, 140, 144, 145, 149, 158, 167, 169, 193, 202, 227, 232, 243, 251, 258, 271, 307, 359, 445, 474, 498, 678, 848, 962, 1010		
b.	Solve radical equations of a single variable, including those with extraneous roots.	**SE/TE:** 452-455, 456-459, 460-461, 462-463, 464, 468, 469, 473, 474, 498, 513, 557, 619, 678, 697, 755, 762, 880, 1015		
c.	Solve absolute value and compound inequalities of a single variable.	**SE/TE:** 41, 43-44, 45-47, 50, 53-55, 56-58, 59, 60, 64, 65, 69, 79, 88, 104, 111, 129, 232, 271, 730, 1010		
d.	Add, subtract, multiply and divide rational expressions and solve rational equations.	**SE/TE:** 573-577, 577-580, 581, 582-585, 586-588, 589-592, 592-595, 596-597, 598-600, 601, 602, 605-606, 607, 619, 625, 678, 723, 817, 880, 937, 1017		
e.	Simplify algebraic expressions involving negative and rational exponents.	**SE/TE:** 330-332, 333-334, 352, 392, 402, 407, 411, 412, 415, 419, 420-423, 425, 427, 451, 465, 467, 469, 474, 505, 563, 571, 888, 1014, 1015		

Objective 1.2: Solve systems of equations and inequalities.				
a.	Solve systems of linear, absolute value, and quadratic equations algebraically and graphically.	**SE/TE:** 152, 153-158, 159, 160-167, 173, 178-185, 186, 193, 202, 205-208, 212-217, 218-219, 220, 222-224, 226, 227, 228, 230-231, 232, 307, 315, 335, 352, 445, 474, 522, 632, 657, 658-664, 667, 672, 673, 858, 1012, 1018		
b.	Graph the solutions of systems of linear, absolute value, and quadratic inequalities on the coordinate plane.	**SE/TE:** 168-170, 171-173, 186, 193, 209, 221, 223, 227, 230, 233, 291, 300-302, 304-305, 307, 1012		
c.	Solve application problems involving systems of equations and inequalities.	**SE/TE:** 155, 157-158, 162, 165-167, 170, 172-173, 174-175, 176, 181, 184-185, 186, 193, 206, 208-209, 215-216, 219, 220, 227, 230-231, 233		
Objective 1.3: Represent and compute fluently with complex numbers.				
a.	Simplify numerical expressions, including those with rational exponents.	**SE/TE:** 9, 10-11, 13-15, 17, 32, 40, 58, 65, 330-331, 333, 338, 341, 352, 402, 411, 415, 417-418, 420-422, 424, 427, 459, 466-467, 469, 471, 473, 485, 505, 595, 664, 730, 833, 888, 975		
b.	Simplify expressions involving complex numbers and express them in standard form, $a + bi$.	**SE/TE:** 275-279, 279-282, 286, 288-289, 291, 293, 296, 320-321, 323, 335, 399, 474, 664, 1013		

Objective 1.4: Model and solve quadratic equations and inequalities.				
a.	Model real-world situations using quadratic equations.	**SE/TE:** 235, 239, 241-243, 246-247, 250-251, 254, 256-258, 261-262, 264-265, 268-269, 270-271, 273, 274, 287, 289-290, 295, 298-299, 303, 306-307, 311, 314-315, 316, 319, 321-322, 323, 325, 327		
b.	Approximate the real solutions of quadratic equations graphically.	**SE/TE:** 273		
c.	Solve quadratic equations of a single variable over the set of complex numbers by factoring, completing the square, and using the quadratic formula.	**SE/TE:** 252-255, 255-258, 259-262, 263-265, 266-269, 269-271, 272-273, 282, 284-287, 288-291, 292-293, 295, 296-299, 302-303, 305, 315, 316, 319-321, 323, 327, 344, 352, 368, 399, 451, 474, 632, 678, 730, 755, 880, 930, 962, 1013		
d.	Solve quadratic inequalities of a single variable.	**SE/TE:** 302-303, 304-307, 315, 316, 322, 344, 427, 730, 1013		
e.	Write a quadratic equation when given the solutions of the equation.	**SE/TE:** 256, 297, 309-310, 313, 315, 323, 326, 386, 392, 664		

STANDARD II: Students will understand and represent functions and analyze function behavior.				
Percentage of coverage in the *student and teacher edition* for Standard II: 100 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: N/A%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition (SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 2.1: Represent mathematical situations using relations.				
a.	Model real-world relationships with functions.	**SE/TE:** 108, 110, 115-116, 118-119, 235, 239, 241, 242-243, 246-247, 250-251, 262, 268-269, 287, 290, 295, 298-299, 396, 398-399, 400, 480-481, 483-485, 488, 490-491, 505, 516, 521-522, 525, 530, 532-533, 534-536, 537, 540-542, 543		
b.	Describe a pattern using function notation.	**SE/TE:** 75-76, 78, 236, 239, 240-242, 249-250, 337-341, 341-342, 345, 393, 395, 397-399, 428-431, 432-433, 435, 439-441, 443, 445, 446-447, 449-451, 478, 482-483, 486, 491, 496-497, 557, 558-559, 561-563, 565, 567, 568-569, 874		
c.	Determine when a relation is a function.	**SE/TE:** 73-74, 77, 96, 140, 141, 145, 148, 232, 282, 440, 443, 872, 1011		
d.	Determine the domain and range of relations.	**SE/TE:** 72-73, 76-77, 79, 80-81, 141, 148, 391, 428-431, 432, 446-448, 449-450, 459, 463, 469, 474, 479, 482, 487, 489, 491, 498, 536, 639, 762, 894, 911, 1015		

Objective 2.2: Evaluate and analyze functions.				
a.	Find the value of a function at a given point.	**SE/TE:** 75, 78, 120, 131, 141, 145, 149, 158, 209, 338-339, 341, 343, 359, 403, 411, 427, 430-431, 432-433, 435, 446-447, 470-471, 473, 478, 486, 749, 762, 914, 1011		
b.	Compose functions when possible.	**SE/TE:** 430-431, 432-434, 435, 436, 439, 443, 445, 451, 467, 469, 470-471, 474, 491, 723, 762, 894, 914, 1015		
c.	Add, subtract, multiply, and divide functions.	**SE/TE:** 428-429, 432, 435, 445, 451, 465, 467, 469, 474, 723, 762, 894, 1015		
d.	Determine whether or not a function has an inverse, and find the inverse when it exists.	**SE/TE:** 437, 438-442, 442-445, 464, 467, 469, 473, 474, 491, 498, 501, 504, 678, 689, 713, 872, 1015		
e.	Identify the domain and range of a function resulting from the combination or composition of functions.	**SE/TE:** 428-431, 432, 445, 469, 474, 762, 894, 1015		
Objective 2.3: Define and graph exponential functions and use them to model problems in mathematical and real-world contexts.				
a.	Define exponential functions as functions of the form $y = ab^x$, $b > 0$, $b \neq 1$.	**SE/TE:** 478-481, 483, 486-488, 489, 493-494, 496, 538		
b.	Model problems of growth and decay using exponential functions.	**SE/TE:** 478-481, 482-485, 486-488, 489-491, 494-495, 497-498, 506, 521, 525, 527, 530, 534-535, 537, 539-540, 543, 678-679		
c.	Graph exponential functions.	**SE/TE:** 478-480, 482-485, 486-488, 489-491, 493-494, 496-498, 502, 506, 523, 536, 538, 539-540, 543, 547, 557, 588, 678, 704, 771, 894, 1016		

Objective 2.4: Define and graph logarithmic functions and use them to solve problems in mathematics and real-world contexts.				
a.	Relate logarithmic and exponential functions.	**SE/TE:** 499-500, 502, 503, 504, 506, 511, 518, 704, 1016		
b.	Simplify logarithmic expressions.	**SE/TE:** 501, 504, 507-509, 510-513, 518, 520, 536, 541, 543, 546, 657, 678, 780, 1016		
c.	Convert logarithms between bases.	**SE/TE:** 508-509, 511, 513, 543, 1016		
d.	Solve exponential and logarithmic equations.	**SE/TE:** 515-519, 519-522, 523-525, 538, 542, 543, 547, 678, 697, 723, 809, 1016		
e.	Graph logarithmic functions.	**SE/TE:** 502-503, 504, 506, 513, 514, 521, 525, 527, 541, 543, 595, 678, 894, 962, 1016		
f.	Solve problems involving growth and decay.	**SE/TE:** 478-481, 482-485, 486-488, 489-491, 494-495, 497-498, 506, 521-522, 525, 527, 530, 534-535, 537, 539-540, 543, 545, 546, 678-679		

STANDARD III: Students will use algebraic, spatial, and logical reasoning to solve geometry and measurement problems.				
Percentage of coverage in the *student and teacher edition* for Standard III: 100 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: N/A%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition (SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 3.1: Examine the behavior of functions using coordinate geometry.				
a.	Identify the domain and range of the absolute value, quadratic, radical, sine and cosine functions.	**SE/TE:** 447-448, 449-450, 459, 468, 469, 491, 908, 912		
b.	Graph the absolute value, quadratic, radical, sine and cosine functions.	**SE/TE:** 121-122, 123-126, 127-128, 135-136, 138, 140, 144, 145, 149, 236-239, 240-243, 244, 245-248, 249-251, 258, 265, 307, 318-319, 323, 445, 446-448, 449-451, 455, 459, 461, 463, 464, 465, 468, 469, 473, 474, 908-911, 912-914, 915-917, 919-922, 937, 962		
c.	Graph functions using transformations of parent functions.	**SE/TE:** 89, 121-122, 123-126, 127-129, 135, 136, 138, 144, 145, 236-237, 245-246, 249-250, 319, 323, 446-448, 449-450, 459, 465, 468, 469, 474, 479, 482, 487, 489, 491, 493-494, 496, 558-559, 561-562, 915-918, 919-922, 962		
d.	Write an equation of a parabola in the form $y = a(x - h)^2 + k$ when given a graph or an equation.	**SE/TE:** 287, 289-290, 291, 309-310, 312, 315, 327, 386, 392, 474, 648		

Objective 3.2: Determine radian and degree measures for angles.				
a.	Convert angle measurements between radians and degrees.	**SE/TE:** 860-862, 863, 865, 899, 901, 904-905, 922, 1022		
b.	Find angle measures in degrees and radians using inverse trigonometric functions, including exact values for special triangles.	**SE/TE:** 876-877, 878-880, 883-885, 886-888, 889-891, 892-894, 896, 899-900, 901, 902-903, 905, 930, 954, 1022		
Objective 3.3: Determine trigonometric measurements using appropriate techniques, tools and formulas.				
a.	Define the sine, cosine, and tangent functions using the unit circle.	**SE/TE:** 867, 869, 870-871, 880, 901, 908, 1022		
b.	Determine the exact values of the sine, cosine, and tangent functions for the special angles of the unit circle using reference angles.	**SE/TE:** 867, 869, 870-871, 880, 899, 901, 908, 1022		
c.	Find the length of an arc using radian measure.	**SE/TE:** 862, 864-865, 873, 904, 922, 1022		
d.	Find the area of a sector in a circle using radian measure.	**SE/TE:** 862, 864-864, 873, 904-905, 922, 1022		

STANDARD IV: Students will understand concepts from probability and statistics and apply statistical methods to solve problems.				
Percentage of coverage in the *student and teacher edition* for Standard IV: 100 %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: N/A%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition (SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 4.1: Apply basic concepts of probability.				
a.	Distinguish between permutations and combinations and identify situations in which each is appropriate.	**SE/TE:** 682-686, 686-689, 690-694, 694-697, 702, 704, 705, 733, 734-735, 737, 740-741, 1019		
b.	Calculate probabilities using permutations and combinations to count events.	**SE/TE:** 699, 702, 725-726, 728-730, 733, 736, 737, 755, 1019		
c.	Compute conditional and unconditional probabilities in various ways, including by definitions, the general multiplication rule, and probability trees.	**SE/TE:** 698-701, 701-704, 705, 706, 707-709, 710-713, 714, 717-720, 721-723, 724-726, 727-730, 731, 732, 733, 735-736, 737739, 740-741, 755, 825, 848, 1019		
d.	Define simple discrete random variables.	**SE/TE:** 724-725, 727		

Objective 4.2: Use percentiles and measures of variability to analyze data.				
a.	Compute different measures of spread, including the range, standard deviation and interquartile range.	**SE/TE:** 745-746, 747-749, 750, 751-752, 753-755, 756, 783, 784-785, 787, 791, 848-849, 872, 1020		
b.	Compare the effectiveness of different measures of spread, including the range, standard deviation and interquartile range in specific situations.	**SE/TE:** 746, 748		
c.	Use percentiles to summarize the distribution of a numerical variable.	**SE/TE:** *The opportunity to address this standard can be found on pages:* 1008-1009		
d.	Use histograms to obtain percentiles.	**SE/TE:** *The opportunity to address this standard can be found on pages:* 724, 726, 728-729, 731, 732, 1008-1009		